

SEP 15 1992



ORIGINAL

## MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDES

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 8396 MICROBIOCIDES

DESCRIPTION: Aqueous solution of glutaraldehyde and a quaternary ammonium compound

NFPA 704M/HMIS RATING: 3/3 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER  
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

## SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Glutaraldehyde	111-30-8	14
n-Alkyl dimethyl benzyl ammonium chloride	139-08-2	2.5

## SECTION 3 PRECAUTIONARY LABEL INFORMATION

DANGER: Corrosive. Causes irreversible eye damage. Causes skin irritation. Harmful if inhaled. Harmful if swallowed. May cause skin sensitization. Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Do not swallow. Wear goggles, protective clothing, and rubber gloves. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

## SECTION 4 FIRST AID INFORMATION

EYES:	Immediately flush with water for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN:	Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION:	Do not induce vomiting. Do not give anything to drink. Call a physician at once.
INHALATION:	Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Aspiration may cause lung damage. Probable mucosal damage may contraindicate the use of gastric lavage.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.



# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDES

### Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT: Can cause severe irritation. Can cause contact dermatitis in susceptible individuals.

INGESTION: Can be harmful or fatal.

INHALATION: Can cause severe respiratory irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

## SECTION 6 TOXICOLOGY INFORMATION

TOXICITY STUDIES: Toxicity studies have not been conducted on this product, but acute toxicity studies have been conducted on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):  $LD_{50} = 1,648$  mg/kg

95% Confidence Limit = 1,220-2,227 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS):  $LD_{50} = 8.6-13.7$  mg/kg

ACUTE INHALATION TOXICITY (ALBINO RATS):  $LC(LO) = \text{Greater than } 2.5$  l/minute (saturated vapor for 6 to 8-hours resulted in no deaths)

COMMENTS: Examination of all sacrificed animals at the end of the study showed no abnormalities.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

COMMENTS: Produces moderate irritation.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS): Severely irritating

COMMENTS: At levels of 0.2% and below of glutaraldehyde no eye irritation was noted. Levels above 0.2% of glutaraldehyde produced moderate to severe irritation and corneal injury.

SKIN SENSITIZATION: At levels of 0.2% and lower no sensitization occurred in human studies. Higher levels produced allergic contact dermatitis. Cross



# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDES

## Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 6 TOXICOLOGY INFORMATION

( CONTINUED )

reaction with formaldehyde or from lower concentrations of glutaraldehyde does not occur.

OTHER TOXICITY RESULTS: Doses of 25 and 50 mg/kg given by gavage to pregnant rats produced decreased in maternal body weight. There were no other indications of maternal toxicity nor were there evidence of fetotoxicity or external, visceral or skeletal abnormalities. Mice (CD-1 strain) given 100 mg/kg by gavage showed fetotoxicity as evidenced by decreased body weight. At lower doses, there was no evidence of fetotoxicity or skeletal abnormalities. No evidence of teratogenic effects were noted in either species.

Mutagenicity in vitro tests of Chinese hamster ovary, sister chromatid exchange and unscheduled DNA synthesis did not produce dose-related responses. Oral doses of 30 and 60 mg/kg to mice showed no effect in the dominant lethal assay. In all five strains of Salmonella, with and without metabolic activation noted.

Glutaraldehyde incorporated into the diet of rats up to 1.6 g/kg for seven days resulted in no deaths. An eleven week drinking water study of glutaraldehyde at up to 0.5% showed no effect.

## SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear	FORM: Liquid	ODOR: Characteristic
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	1.03 @ 68 Degrees F	ASTM D-1298
pH (NEAT) =	3.1-4.5	ASTM E-70
FREEZE POINT:	-3 Degrees C/26 Degrees F	ASTM D-1177
BOILING POINT:	212 Degrees F @ 760 mm Hg	ASTM D-86
FLASH POINT:	Not applicable	

NOTE: These physical properties are typical values for this product.

## SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Not applicable

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

## SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid alkaline materials (eg. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide



# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDAL

### Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 9 REACTIVITY INFORMATION

( CONTINUED )

(lime), cyanides, sulfides, hypochlorites, chlorites) which can generate heat with splattering or boiling and the release of toxic fumes.

**STORAGE:** Aqueous solutions of glutaraldehyde, quaternary ammonium compounds, and ethanol are corrosive to many commonly used materials of construction such as steel, galvanized iron, aluminum, tin, and zinc. These solutions can be stored and handled in baked phenolic-lined steel, polyethylene, stainless steel, or reinforced epoxy-plastic equipment. This product freezes at about -3 degrees C (27 degrees F). Therefore, unless the storage tank is inside or underground, heating and insulation may be required. If heating is needed, exposure to high temperatures should be avoided. For short storage times (up to about one month), temperatures of up to 100 degrees F can be tolerated, but the preferred maximum storage temperature is about 80 degrees F.

**FEEDING EQUIPMENT:** A stainless steel centrifugal pump is suggested for transfer service. Spiral wound stainless steel with teflon is suitable for gaskets and packing.

**THERMAL DECOMPOSITION PRODUCTS:** In the event of combustion CO, CO<sub>2</sub>, NH<sub>4</sub>, NO<sub>x</sub>, HCl may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

## SECTION 10 PERSONAL PROTECTION EQUIPMENT

**RESPIRATORY PROTECTION:** If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent supplied air respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

**VENTILATION:** General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

**PROTECTIVE EQUIPMENT:** Wear gloves, boots, apron and a face shield with chemical splash goggles. A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.



# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDES

## Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

### SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways or public water supplies.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

PESTICIDE DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Metal or Plastic Containers. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or other procedures approved by state and local authorities. Do not cut, or weld on or near metal containers. Plastic containers: may be incinerated, if allowed by state and local and authorities, if burned, stay out of smoke. Metal containers: must not be incinerated.

## SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA: Results below based on a similar product.



# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDAL

## Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 12 ENVIRONMENTAL INFORMATION

( CONTINUED )

96 hour static acute  $LC_{50}$  to Bluegill Sunfish = 37.6 mg/L

96 hour no observed effect concentration is 10 mg/L based on no mortality or abnormal effects.

96 hour static acute  $LC_{50}$  to Rainbow Trout = 42.1 mg/L

96 hour no observed effect concentration is 32 mg/L based on no mortality or abnormal effects.

48 hour static acute  $LC_{50}$  to Daphnia magna = 16.9 mg/L

48 hour no observed effect concentration is 105 mg/L based on no mortality or abnormal effects.

If released into the environment, see CERCLA in Section 14.

## SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - OTHER REGULATED SUBSTANCES,  
9, UN8027, PG NONE  
CONTAINS - GLUTARALDEHYDE

## SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

### FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Glutaraldehyde - Corrosive, sensitizer

Glutaraldehyde = Ceiling 0.2 ppm, 0.82 mg/m<sup>3</sup> ACGIH/TLV

Glutaraldehyde = Ceiling 0.2 ppm, 0.7 mg/m<sup>3</sup> OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986



# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDES

## Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 14 REGULATORY INFORMATION

( CONTINUED )

(TITLE III) - SECTIONS 302, 311, 312 AND 313:

### SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

### SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

### SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

### TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

### FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA):

EPA Reg. No. 10352-33-1706. This product is registered for use as a microbiocide used in air washers and recirculating cooling water systems. In all cases follow instructions on the product label.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:  
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15  
(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):  
None of the ingredients are specifically listed.

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:  
This product does not contain ingredients covered by the Clean Air Act.

### STATE REGULATIONS:

#### CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.



# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDES

## Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 14 REGULATORY INFORMATION

( CONTINUED )

### MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

### STATE RIGHT TO KNOW LAWS:

Regulated in those states using the TLV for glutaraldehyde as a criteria for listing.

## SECTION 15 ADDITIONAL INFORMATION

None

## SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

## SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillian Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E.,





# MATERIAL SAFETY DATA SHEET

## PRODUCT

NALCO 8396 MICROBIOCIDES

## Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 17 BIBLIOGRAPHY

( CONTINUED )

eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA)

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 01/09/91

DATE PRINTED: 08/29/92



# MATERIAL SAFETY DATA SHEET

PRODUCT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)